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Factors Influencing Consumers' Willingness to Participate in Tourism Involving New-Energy Low-Altitude Aircraft: An Extended TAM Perspective

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Abstract
With the accelerated expansion of the low-altitude economy and the advancement of China's "dual carbon" goals, tourism involving new-energy low-altitude aircraft has emerged as an important consumer-facing application. However, large-sample empirical evidence on consumers' willingness to participate and its underlying behavioral mechanisms remains limited. Drawing on the Technology Acceptance Model (TAM), this study develops an extended research model comprising seven dimensions: perceived usefulness, perceived ease of use, perceived safety, environmental concern, innovativeness, social influence, and perceived value. Using 1,132 valid responses from 31 provincial-level regions in China, this study conducts reliability and validity tests, correlation analysis, and multiple linear regression. The results show that all seven variables have significant positive effects on willingness to participate. According to standardized regression coefficients, the factors rank from highest to lowest as follows: perceived safety, innovativeness, perceived ease of use, environmental concern, perceived usefulness, social influence, and perceived value. Perceived safety and innovativeness are the core determinants. Willingness to participate also differs significantly by gender, age, and region, with male, younger, and eastern-region respondents reporting higher willingness. These findings provide evidence for low-altitude tourism enterprises to improve safety disclosure, product innovation, and service processes, and for demonstration zones to refine supporting policies. The generalizability of the findings is limited by the cross-sectional design and convenience sampling.

Keywords: new-energy low-altitude aircraft, low-altitude tourism, willingness to participate, Technology Acceptance Model, low-altitude economy policy

1. Introduction

In recent years, the global low-altitude economy has entered a stage of large-scale development. Technological innovation and scenario-based applications have become important directions in the technological and industrial transformation. Internationally, the United States and European countries have promoted the application of new-energy aircraft, including eVTOLs and hydrogen-powered drones, in logistics and tourism through regulatory relaxation, technological support, and airspace management optimization. Morgan Stanley predicts that the global low-altitude economy may exceed one trillion USD by 2040, with low-altitude tourism serving as a key growth driver. In China, the low-altitude economy has been incorporated into national strategic emerging industries, and policy support has continued to increase. In 2021, the Outline of the National Comprehensive Three-Dimensional Transportation Network Plan explicitly called for developing the low-altitude economy. The 2023 Central Economic Work Conference further proposed building it into a new growth engine. These developments indicate that China's low-altitude economy has moved from pilot exploration to a new stage of large-scale development.

By 2024, more than 20 low-altitude economy demonstration zones had been approved nationwide, covering core regions such as the Guangdong–Hong Kong–Macao Greater Bay Area, the Yangtze River Delta, and the Chengdu–Chongqing economic zone. Destinations such as Zhangjiajie, Sanya, and Xi'an have achieved routine low-altitude tourism operations, forming a diversified product system that includes aerial sightseeing, short-distance shuttles, and themed experiences. Data from CCID Consulting show that China's low-altitude economy reached 505.95 billion yuan in 2023, a year-on-year increase of 33.8%. A survey by iMedia Research indicates that from 2022 to 2024, nearly 80% of respondents expressed interest in low-altitude cultural tourism projects such as helicopter sightseeing, with project awareness reaching 86%. The market is therefore at a stage of rapid growth.

The sustainable development of the low-altitude economy depends on transforming consumer expectations into actual willingness to participate. Existing research has mainly focused on the technical feasibility of new-energy low-altitude aircraft and the construction of industry policy frameworks, while the behavioral mechanisms of consumer participation in low-altitude tourism remain underexplored. On the one hand, research on core influencing factors such as safety perception and environmental identification is insufficient. On the other hand, regional cultural differences, airspace management restrictions, and privacy protection issues make it difficult to construct a universal theoretical model of consumer behavior. Against this background, this study uses the Technology Acceptance Model (TAM) as its basic framework and employs large-sample questionnaire data to empirically examine consumers' willingness to participate in tourism involving new-energy low-altitude aircraft and its core influencing factors. The findings aim to provide empirical evidence for enterprises to optimize service systems and for government departments to improve industrial policies, thereby promoting the coordinated development of the low-altitude economy and China's "dual carbon" goals.

2. Rent Development of Tourism Involving New-Energy Low-Altitu De Aircraft

2.1. Rnational Development

Driven by policy support and technological advances, the global new-energy low-altitude aircraft industry is developing rapidly. Low-altitude tourism, as a core application scenario close to consumers, has become an important entry point for industrial commercialization. Data from the Huajing Industry Research Institute show that the global eVTOL market reached USD 12.53 billion in 2023 and is expected to increase to USD 35.79 billion by 2032, with a compound annual growth rate of 12.4% from 2023 to 2032 [1]. Growth is mainly driven by government support for urban air mobility (UAM), continuous iteration of core technologies such as battery power and autonomous driving, and corporate industrial layout.

Regionally, the global low-altitude economy shows significant differentiation. In 2023, North America accounted for more than 40% of the global market, benefiting from technological R&D advantages and a mature airspace management system. The Asia–Pacific region followed with approximately 32%, with China becoming a regional growth core due to policy dividends and huge consumer potential. Europe accounted for approximately 18% owing to its deep aviation industrial base and relatively complete policy and regulatory system. Emerging markets in Latin America, the Middle East, and Africa together accounted for about 8% and remain in the early stage of industrial development; their market potential is expected to be released in the future based on abundant tourism resources. Overall, the global new-energy low-altitude aircraft market is extending toward multiple scenarios such as cargo logistics, urban passenger transport, intercity navigation, and low-altitude tourism. Low-altitude tourism, which combines experience and consumption, has become an important lever for promoting large-scale industrial development.

2.2. Stic Development

Against the background of continuously strengthened national low-altitude economy policies, China's new-energy low-altitude aircraft industry has achieved rapid growth, and the commercialization of low-altitude tourism has continued to accelerate. A development pattern characterized by "policy guidance, demonstration zones taking the lead, and scenario implementation" has taken shape. In 2023, the market size of China's new-energy low-altitude aircraft reached 980 million yuan, a year-on-year increase of 77.3%, and is expected to grow to 1.72 billion yuan in 2024. From 2021 to 2024, the market size increased from 300 million yuan to 1.72 billion yuan. Growth is mainly concentrated in Central South, East, and North China, highly consistent with the construction of low-altitude economy demonstration zones and the pace of policy implementation. Demonstration zones have become core carriers for the implementation of new-energy low-altitude aircraft tourism scenarios.

The low-altitude tourism market has expanded simultaneously. In 2023, the number of passengers carried on low-altitude tourism flights nationwide climbed to approximately 600,000, marking the industry's entry into a period of rapid development. Various regions have positioned low-altitude sightseeing products as core low-altitude leisure products and, relying on scenic areas and urban landmarks, have cultivated a number of benchmark projects, such as helicopter sightseeing at Tianmen Mountain in Zhangjiajie and maritime low-altitude tours in Sanya. Traditional low-altitude tourism products have become increasingly mature, and the market structure is relatively stable. The hot-air balloon market has stabilized at around 1 billion yuan, and the tourism helicopter market has grown from 20 billion yuan to 22 billion yuan. Niche low-altitude sports tourism products such as paragliding have grown significantly, with the market size increasing from 600 million yuan to 1.24 billion yuan between 2019 and 2022, a three-year compound annual growth rate of 27%, making them an important supplement to the low-altitude tourism market.

Overall, China's low-altitude tourism market has formed a pattern of "stable volume for traditional products and growth for emerging products." With advantages such as low carbon emissions, environmental friendliness, and operational flexibility, new-energy low-altitude aircraft have become an important direction for upgrading low-altitude tourism products. At the same time, as the construction of national low-altitude economy demonstration zones continues to advance, airspace management optimization, infrastructure improvement, and operational standardization are being

implemented, laying a solid foundation for the large-scale development of tourism involving new-energy low-altitude aircraft.

3. Oretical Framework and Research Hypotheses

3.1. Retical Basis and Extended Model

The Technology Acceptance Model (TAM) was proposed by Davis in 1989 to explain individuals' acceptance of emerging technologies. The model posits that perceived usefulness and perceived ease of use are core variables affecting users' attitudes and behavioral intentions and can be extended through external variables to fit specific contexts [2][3]. Considering that tourism involving new-energy low-altitude aircraft combines technological experience, safety risks, environmental value, and consumption cost, this study introduces five additional variables—perceived safety, environmental concern, innovativeness, social influence, and perceived value—on the basis of TAM to construct an extended TAM model. The model treats seven perceptual factors as antecedent variables and consumer willingness to participate as the outcome variable, examining the direct effects of each factor on willingness to participate. The research model is shown in Figure 1.

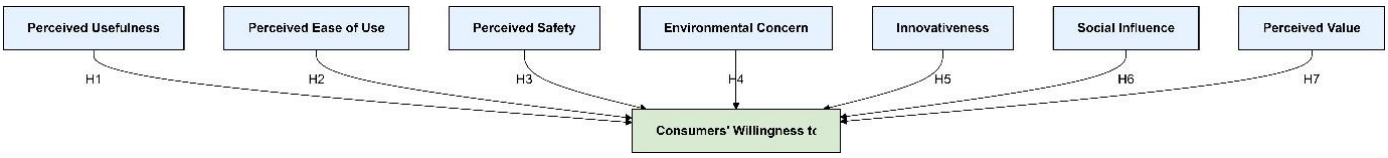


Fig 1: Extended TAM research model

3.2. Able Definitions and Hypotheses

Perceived usefulness. Perceived usefulness refers to the extent to which consumers believe that tourism involving new-energy low-altitude aircraft can improve travel efficiency, save time, and provide unique experiences. Previous studies have shown that perceived usefulness is an important antecedent of technology acceptance [4]. Accordingly, the following hypothesis is proposed:

H1: Perceived usefulness has a significant positive effect on consumers' willingness to participate in tourism involving new-energy low-altitude aircraft.

Perceived ease of use. Perceived ease of use refers to the degree to which consumers perceive booking, riding, and using new-energy low-altitude aircraft tourism services as easy. Perceived ease of use generally helps reduce usage barriers and enhance acceptance intention [5]. Accordingly, the following hypothesis is proposed:

H2: Perceived ease of use has a significant positive effect on consumers' willingness to participate in tourism involving new-energy low-altitude aircraft.

Perceived safety. Perceived safety refers to consumers' trust in the technical reliability, operational norms, and safeguard measures of new-energy low-altitude aircraft. Because low-altitude tourism involves personal safety, safety perception may be the primary consideration in consumer decision-making. Accordingly, the following hypothesis is proposed:

H3: Perceived safety has a significant positive effect on consumers' willingness to participate in tourism involving new-energy low-altitude aircraft.

Environmental concern. Environmental concern refers to consumers' recognition of the environmental friendliness, carbon reduction, and sustainable development value of tourism involving new-energy low-altitude aircraft. Environmental values may influence participation willingness by enhancing perceived social value [6][7]. Accordingly, the following hypothesis is proposed:

H4: Environmental concern has a significant positive effect on consumers' willingness to participate in tourism involving new-energy low-altitude aircraft.

Innovativeness. Innovativeness refers to consumers' tendency to try new tourism products and experiences earlier than others [8]. Tourism involving new-energy low-altitude aircraft is highly novel, and innovative consumers may be more willing to try it. Accordingly, the following hypothesis is proposed:

H5: Innovativeness has a significant positive effect on consumers' willingness to participate in tourism involving new-energy low-altitude aircraft.

Social influence. Social influence refers to the degree of support and recognition from family, friends, media, and social networks regarding consumers' attempts to try tourism involving new-energy low-altitude aircraft. Social support can reduce perceived uncertainty and decision-making risk [9]. Accordingly, the following hypothesis is proposed:

H6: Social influence has a significant positive effect on consumers' willingness to participate in tourism involving new-energy low-altitude aircraft.

Perceived value. Perceived value refers to consumers' subjective evaluation of the price reasonableness, value for money, and willingness to pay for tourism involving new-energy low-altitude aircraft [10]. When consumers believe that the product is reasonably priced and worth the money, their willingness to participate may increase. Accordingly, the following hypothesis is proposed:

H7: Perceived value has a significant positive effect on consumers' willingness to participate in tourism involving new-energy low-altitude aircraft.

4. A and Methods

4.1. Tionnaire Design

The questionnaire was developed with reference to relevant domestic and international literature and adapted to the research topic. It consisted of two parts. The first part collected personal characteristics, including gender, age, education, occupation, monthly income, and region. The second part measured the study constructs. Based on seven dimensions—perceived usefulness, perceived ease of use, perceived safety, environmental concern, innovativeness, social influence, and perceived value—24 items were designed to measure consumers' willingness to participate. A five-point Likert scale was used: A = strongly disagree, B = disagree, C = neutral, D = agree, and E = strongly agree. The items were adapted from Davis [2], Rogers [8], Ajzen [11], and Han and Kim [12] (see Appendix Table 1).

4.2. Ling and Data Collection

The questionnaire was distributed through the Wenjuanxing platform using an online
convenience sampling method, targeting consumers in 31 provincial-level administrative regions of China. A total of 1,200 questionnaires were distributed, and 1,132 valid responses were collected, yielding a valid response rate of 94.3%. It should be noted that the sample is skewed toward young people, eastern-region residents, and corporate employees, who are potential consumer groups for tourism involving new-energy low-altitude aircraft. However, this is not a strict probability sample, and the generalizability of the conclusions should be treated with caution.

Regarding willingness to participate, 772 respondents, approximately 68% of the sample, indicated that they were willing to participate in tourism involving new-energy low-altitude aircraft. Among them, 585 reported strong willingness to participate. Only 11% of respondents indicated that they were unwilling to participate. Overall, public willingness to participate in tourism involving new-energy low-altitude aircraft is positive.

4.3. Le Profile

Respondents aged 26–35 accounted for 31.71% of the sample, and those aged 18–35 together accounted for more than 57.5%. Respondents from eastern China accounted for 40.02%, and those from eastern and central China combined accounted for more than 67%. Corporate employees formed the largest occupational group, at 44.88%. In terms of education, 61.4% held associate or bachelor's degrees, and more than 74% had an associate degree or higher. Regarding monthly income, 38.43% earned between RMB 5,000 and RMB 10,000, and 31.18% earned more than RMB 10,000. Respondents earning between RMB 5,000 and RMB 20,000 accounted for more than 61.75% of the sample (see Appendix Table 2).

4.4. P Differences

Independent-samples t-tests and analysis of variance were used to examine differences in willingness to participate across demographic groups. The results show that gender, age, and region had significant effects on willingness to participate. Male respondents were more willing to participate than female respondents; younger groups were more favorable toward tourism involving new-energy aircraft; and consumers in eastern China had significantly higher willingness to participate than those in other regions. Education, occupation, and monthly income had no significant effect on willingness to participate (see Appendix Table 3 and Appendix Table 4).

5. Ults and Analysis

5.1. Ability and Validity Tests

Factor analysis was used to test the construct validity of the scale. The KMO val ue was 0.885, above the threshold of 0.5. Bartlett's test of sphericity was significant,
with an approximate chi-square of 12,506.685, df = 276, and $p < 0.001$, indicating th at the scale was suitable for factor analysis. Principal component analysis was used to extract factors, and the cumulative variance contribution rate was 74.927%. The factor loading of each item exceeded the threshold of 0.4, indicating that the factors effectiv ely captured the relevant information and that the scale had good construct validity (s ee Appendix Table 5).

Cronbach's α coefficients were used to test the reliability of the scale. All dimens ions had Cronbach's α values above 0.8: perceived usefulness 0.821, perceived ease of use 0.829, perceived safety 0.844, environmental concern 0.836, innovativeness 0.835, social influence 0.833, and perceived value 0.823. These results indicate that the meas urement scales have good internal consistency and reliability (see Appendix Table 6).

5.2. Elation Analysis

Pearson correlation analysis was used to examine the relationships between the se ven independent variables and the dependent variable, consumers' willingness to partici pate. The results show that the correlation coefficients were as follows: perceived usef ulness 0.351, perceived ease of use 0.376, perceived safety 0.405, environmental conce rn 0.343, innovativeness 0.386, social influence 0.377, and perceived value 0.347. All correlation coefficients were greater than 0.3 and significant at $p < 0.01$, indicating sig nificant positive correlations between the seven independent variables and willingness to participate and providing a basis for subsequent regression analysis (see Appendix T able 7).

5.3. Ession Analysis

With willingness to participate as the dependent variable and perceived usefulness, perceived ease of use, perceived safety, environmental concern, innovativeness, social influence, and perceived value as independent variables, a multiple linear regression m odel was constructed. The results show that the model correlation coefficient was $R = 0.571$, and the coefficient of determination was $R^2 = 0.326$, indicating that the model explained 32.6% of the variance in the dependent variable. The adjusted R^2 was 0.322, a small difference from R^2. The model F value was 77.654, $p < 0.001$, indicating a significant linear relationship between the seven independent variables and willingness to participate and confirming the overall validity of the regression model. The VIF val ues of all independent variables were below 2, and tolerances were above 0.5, indicati ng no serious multicollinearity (see Appendix Table 8).

The p-values of the regression coefficients of all independent variables were belo
w 0.05, indicating that all variables had significant positive effects on willingness to p articipate. All research hypotheses were supported. The unstandardized prediction equati on is:

Willingness to participate = 0.477 + 0.106 × perceived usefulness + 0.128 × perc eived ease of use + 0.177 × perceived safety + 0.115 × environmental concern + 0.1 57 × innovativeness + 0.096 × social influence + 0.073 × perceived value

The standardized regression equation is:

Willingness to participate (standardized) = 0.106 × perceived usefulness + 0.129 × perceived ease of use + 0.186 × perceived safety + 0.116 × environmental concern +
0.165 × innovativeness + 0.099 × social influence + 0.073 × perceived value.

According to the standardized regression coefficients, the effects of the seven vari ables on willingness to participate rank from highest to lowest as follows: perceived s afety (0.186), innovativeness (0.165), perceived ease of use (0.129), environmental con cern (0.116), perceived usefulness (0.106), social influence (0.099), and perceived value (0.073). Perceived safety is the most core factor affecting consumers' willingness to p articipate, reflecting

that safety concerns about emerging transportation modes are the primary consideration. Innovativeness ranks second, indicating that the novelty of touri sm involving new-energy low-altitude aircraft has strong appeal to consumers. The effe ct of perceived value is relatively weak, suggesting that at the current stage consumer s are more concerned with safety, innovation, and experiential convenience, and price i s not the primary barrier.

5.4. Ussion

The results are consistent with the basic logic of TAM: perceived usefulness and perceived ease of use both significantly promote willingness to participate. Unlike gen eral information technology acceptance research, however, perceived safety ranks first i n the low-altitude tourism context, indicating that consumer decisions regarding high-ri sk experiential products are primarily constrained by safety trust. Innovativeness ranks second, suggesting that the "novel experience" attribute of tourism involving new-energ y low-altitude aircraft has independent appeal. Environmental concern is significantly p ositive, indicating that the "dual carbon" narrative can be translated into product value recognition. Social influence is significant but relatively weak, suggesting that word-of-mouth and others' support are auxiliary factors. Perceived value ranks last, possibly be cause the current target group is mainly middle- and high-income young people and c
orporate employees with relatively low price sensitivity, or because consumers have no
t yet formed a stable price reference. These findings can provide a basis for low-altitu de tourism enterprises to optimize in the order of "safety trust—product innovation—s ervice convenience—value communication."

6. Icy Recommendations

Based on the research conclusions, this paper focuses on perceived safety, innovativeness, perceived ease of use, and perceived value and proposes recommendations from two aspects: strengthening key factors and addressing general factors.

6.1. D a Full-Chain Safety Assurance System with Safety Trust as the Primary Focus

National low-altitude economy safety management policies should be strictly implemented. Combined with classified airspace management and optimized flight plan approval in demonstration zones, standardized operating procedures for tourism involving new-energy low-altitude aircraft should be established. Efforts should continue to promote the disclosure of flight data and dynamic rating of pilot qualifications, and a transparent safety information disclosure platform should be built so that consumers can understand aircraft operation, maintenance, and pilot qualifications in real time. "Low-altitude tourism safety experience weeks" can be added in demonstration zones, using VR fault drills, safety knowledge popularization, and on-site observation to help consumers intuitively understand safety safeguards. The daily inspection and maintenance system for new-energy low-altitude aircraft should be improved, third-party safety testing agencies should be introduced, and full-life-cycle safety supervision should be achieved to deepen consumer trust in industry safety.

6.2. Nce Product Innovativeness and Experiential Convenience Based on Demo Nstration Zone Resources

Personalized and distinctive tourism products involving new-energy low-altitude aircraft should be developed in light of the tourism resources and urban characteristics of each low-altitude economy demonstration zone. In demonstration zones with rich cultural tourism resources, projects such as urban landmark low-altitude tours, cross-scenic-area aerial shuttles, and intangible cultural heritage low-altitude experiences can be developed. In coastal and mountainous demonstration zones, distinctive scenarios such as maritime low-altitude sightseeing and mountain low-altitude exploration can be created. Following the policy direction of digital economy and cultural tourism integration, AR/VR technologies should be deeply integrated with low-altitude tourism through AR real-scene navigation, AR landscape commentary, and virtual scene interaction to enhance the fun and interactivity of tourism
experiences. Around general aviation airports, take-off and landing points, and low-altitude
tourism service centers, offline service outlets should be arranged, and functions such as product inquiry, booking, payment, itinerary navigation, and after-sales feedback should be integrated to simplify the entire process of booking, boarding, and transfer and lower the operational threshold for consumers.

6.3. Mize Perceived Value and Environmental Value Communication to Lower Participation Barriers

Relying on financial subsidies, tax incentives, and other support policies for the new-energy low-altitude aircraft industry in demonstration zones, enterprises should be encouraged to reduce operating costs and reasonably lower product prices. On the basis of early-bird presales and last-minute flash sales, discount forms such as family packages, seasonal passes, and group discounts can be introduced to improve product value for money. The scope of flight mileage point cooperation should be expanded by linking cultural tourism platforms, credit card systems, airlines, and scenic areas within demonstration zones to achieve point interoperability and redemption. Differentiated pricing strategies should be developed for different regions and consumer groups, and affordable products should be launched in second- and third-tier cities with strong consumption potential and surrounding areas of demonstration zones to cultivate the consumer market. Data on emission reductions and environmental benefits per flight of new-energy low-altitude aircraft should be connected to booking apps, in-flight displays, and demonstration zone tourism promotion platforms. Combined with ecological tourism promotional materials in scenic areas, a "low-carbon flight" tourism brand can be built to enhance recognition of the product's environmental value.

6.4. Ove Social Influence Mechanisms and Regional Coordination to Expand Market Participation

Official promotion platforms, cultural tourism exhibitions, and social media channels of low-altitude economy demonstration zones should be used to release positive industry information and product experiences and guide positive public evaluation. The "more recommendations, more discounts" word-of-mouth incentive rules should be

refined, with clear rebate ratios and arrival times, to enhance consumers' recommendation enthusiasm. A "low-altitude experience officer" content-sharing platform should be built to encourage consumers to share real tourism experiences, and tourism bloggers and influencers should be invited to demonstration zones for experience livestreams and short video creation to expand market influence. In line with the national layout plan for low-altitude economy demonstration zones and the principle of coordinated development of the eastern, central, and western regions,
priority should be given to planning and building small general aviation airports and take-off
and landing points in western and northeastern regions with abundant tourism resources but relatively underdeveloped economies, together with short-distance shuttle networks. An industrial cooperation mechanism among demonstration zones in eastern, central, and western China should be established to promote resource sharing, product interconnection, and technical exchange, thereby narrowing regional gaps in consumer experience.

7. Itations and Future Research

This study has several limitations. First, it adopted online convenience sampling. The sample is skewed toward young people, eastern-region residents, and corporate employees. Although this group fits the characteristics of potential consumers, it is not a strict probability sample, and the generalizability of the conclusions should be treated with caution. Second, the study used cross-sectional questionnaire data, which makes it difficult to strictly test causality; future research could adopt longitudinal tracking or experimental designs. Third, willingness to participate was self-reported; future research could combine actual purchase or experience behavior data. Fourth, the model's R^2 was 0.326, indicating limited explanatory power, which suggests that variables such as attitude, trust, privacy, and airspace convenience have not been included. Fifth, this paper did not report confirmatory factor analysis, composite reliability, average variance extracted, or common method bias tests, nor did it control for demographic variables in the regression. If a target journal requires higher rigor, future studies should add CFA, CR/AVE, Harman's single-factor test, and hierarchical regression to further enhance robustness. Future research could introduce attitude mediation, trust mediation, and regional moderation and use structural equation modeling to further test the extended TAM paths.

Appendix

Appendix Table 1 Measurement Scale

Table 1

Dimension	Item	Item wording	Source
Perceived usefulness	1	Tourism involving new-energy low-altitude aircraft can save time.	Davis,F. D.(1989)
	2	Tourism involving new-energy low-altitude aircraft can provide a unique travel experience.	
	3	Tourism involving new-energy low-altitude aircraft can improve travel efficiency.	
Perceived ease of use	4	Operating a new-energy low-altitude aircraft is very simple.	Davis,F. D.(1989)
	5	The process of riding a new-energy low-altitude aircraft is very convenient.	
	6	Booking and using new-energy low-altitude aircraft for tourism is very easy.	
Perceived safety	7	Tourism involving new-energy low-altitude aircraft is safe.	Davis,F. D.(1989)
	8	I am confident in the technical reliability of new-energy low-altitude aircraft.	
	9	Tourism involving new-energy low-altitude aircraft has comprehensive safety measures.	
	10	Tourism involving new-energy low-altitude aircraft is environmentally friendly.	
Environmental concern	11	I choose tourism involving new-energy low-altitude aircraft because it reduces carbon emissions.	Han,H., &Kim, Y.-2010
		Tourism involving new-energy low-altitude aircraft is consistent with the concept of sustainable development.	
	12		
	13	Tourism involving new-energy low-altitude aircraft is an innovative form of tourism.	Rogers, E.M. (2003)
Innovativeness	14	I like trying new things such as tourism involving new-energy low-altitude aircraft.	
	15	Tourism involving new-energy low-altitude aircraft represents the future direction of tourism.	
Social influence	16	My family and friends support my attempt to try tourism involving new-energy low-altitude aircraft.	Ajzen, I.-1991
	17	Trying tourism involving new-energy low-altitude aircraft would be recognized by others.	
	18	Positive reviews in the media and on social networks would influence my choice of new-energy low-altitude aircraft tourism.	
Perceived value	19	The price of tourism involving new-energy low-altitude aircraft is reasonable.	Ajzen, I.-1991
	20	I am willing to pay a higher price for tourism involving new-energy low-altitude aircraft.	
	21	Tourism involving new-energy low-altitude aircraft can save time.	
Willingness to participate	22	Tourism involving new-energy low-altitude aircraft can provide a unique travel experience.	Ajzen, I.-1991
	23	Tourism involving new-energy low-altitude aircraft can improve travel efficiency.	
	24	Operating a new-energy low-altitude aircraft is very simple.	

Appendix Table 2 Basic Characteristics of the Survey Sample

Table 2

Name	Option	Frequency	Percentage	Name	Option	Frequency	Percentage
Gender	Male	583	51.5		High school or below	292	25.8
	Female	549	48.5	Educational Attainment	Associate's degree	363	32.07
	Under 18	78	6.89		Bachelor's degree	332	29.33
Age	Ages 18–25	292	25.8		Master's degree or higher	145	12.81
	Ages 26–35	359	31.71		Less than 5,000 yuan	344	30.39

Table 3

Ages 36–45	**175**	**15.46**	**Monthly In come Level**	**5,000–10,000 yuan**	**435**	**38.43**
Ages 46–55	172	15.19		10,000–20,000 yuan	264	23.32
56 years old and older	56	4.95		20,000 yuan or more	89	7.86
Student	233	20.58		Eastern Region	453	40.02
Corporate Employees	508	44.88		Western Region	164	14.49
			Region			
Civil Service/Public Institutions	219	19.35		Central Region	306	27.03
Occupation						
Freelancers	73	6.45		Northeast Region	209	18.46
Retired	34	3				
Other	65	5.74				

Appendix Table 3 t-Test Results for Gender

Table 4

	t	p	Is There a Significant Difference?	Result
Gender	2.414	0.016（p<0.05）	There is a significant difference	Men are more willing than women to participate in low-altitude tourism using new energy vehicles

Appendix Table 4 Nalysis of Variance Results

Table 5:

	F	p	Is there a difference?	Result
Age	8.878	0.000（p<0.05）	Significant difference	Young people prefer tourism involving new energy aircraft
Educational Level	0.21	0.889（p>0.05）	No significant difference	There is no significant difference between educational levels and willingness to participate
Occupation	0.341	0.888（p>0.05）	No significant difference	There was no significant difference between occupation and willingness to participate
Monthly income level	0.342	0.795（p>0.05）	No significant difference	There was no significant difference between monthly income levels and willingness to p articipate
Region	3.933	0.008（p<0.05）	Significant difference	People in the eastern region favor new energy flight tourism

Appendix Table 5 Validity Test Results

Table 6

KMO Value		**0.885**
Approximate Chi-Square		12506.685
Bartlett's Sphericity Test	df	276
	p-value	0

Appendix Table 6 Reliability Test Results

Table 7

Dimension	Number of items	Cronbach's α
Perceived usefulness	3	0.821
Perceived ease of use	3	0.829
Perceived safety	3	0.844
Environmental concern	3	0.836
Innovativeness	3	0.835
Social influence	3	0.833
Perceived value	3	0.823

Appendix Table 7 Correlation Matrix of Influencing Factors

Table 8

	Willingness to participate	Perceived usefulness	Perceived ease of use	Perceived safety	Environmental concern	Innovativeness	Social influence	Perceived value
Willingness to participate	1							
Perceived usefulness	0.35	1						
Perceived ease of use	0.376	0.341	1					
Perceived safety	0.405	0.29	0.317	1				
Environmental concern	0.343	0.281	0.301	0.298	1			
Innovativeness	0.386	0.299	0.332	0.297	0.303	1		
Social influence	0.377	0.369	0.38	0.413	0.278	0.357	1	
Perceived value	0.347	0.386	0.354	0.327	0.357	0.336	0.31	1
*p<0.05**p<0.01								

Appendix Table 8 Multiple Linear Regression Results

Table 9

Non-standardized coefficient			Standardized coefficient	*t*	*p*	Collinearity Diagnosis	
	B	Standard Error	*Beta*			VIF	Tolerance
Constant	0.477	0.134	-	3.566	0.000	-	-
Perceived usefulness	0.106	0.028	0.106	3.743	0.000	1.341	0.746
Perceived ease of use	0.128	0.028	0.129	4.539	0.000	1.355	0.738
Perceived safety	0.177	0.027	0.186	6.586	0.000	1.336	0.749
Environmental concern	0.115	0.027	0.116	4.226	0.000	1.267	0.789
Innovativeness	0.157	0.027	0.16	5.732	0.000	1.306	0.766
Social influence	0.096	0.029	0.099	3.367	0.001	1.438	0.696
Perceived value	0.073	0.029	0.073	2.538	0.011	1.394	0.717
F				77.654			
P value				0			
R				0.571			

Table 10

R2	**0.326**
Adjusted R^2	0.322
D-W value	1.974
Dependent variable: Willingness to Participate	
*p<0.05**p<0.01	

Note: Dependent variable: willingness to participate. B = unstandardized coefficient; SE= standard error; Beta = standardized coefficient.

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